

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number  
**WO 2005/074519 A2**

(51) International Patent Classification: Not classified

(21) International Application Number:

PCT/US2005/002539

(22) International Filing Date: 28 January 2005 (28.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/540,933 30 January 2004 (30.01.2004) US

(71) Applicant (for all designated States except US): L & P  
PROPERTY MANAGEMENT COMPANY [US/US];  
4095 Firestone Blvd., South Gate, CA 90280 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): CODOS, Richard,  
N. [US/US]; 34 Casale Drive South, Warren, NJ 07060  
(US). COLLAN, William, W. [US/US]; 11 Crest Circle  
Drive, Freehold, NJ 07728 (US). QUATTROCIOCCI,  
Angelo [US/US]; 120 King High Drive, Thornhill, Ontario  
L4J-3N4 (CA). VOGEL, Peter [CH/CH]; Thole 1174,  
CH-9428 Walzenhausen, AR (CH).

(74) Agents: JORDAN, Joseph, R. et al.; Wood, Herron &  
Evans, L.L.P., 2700 Carew Tower, Cincinnati, OH 45202  
(US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

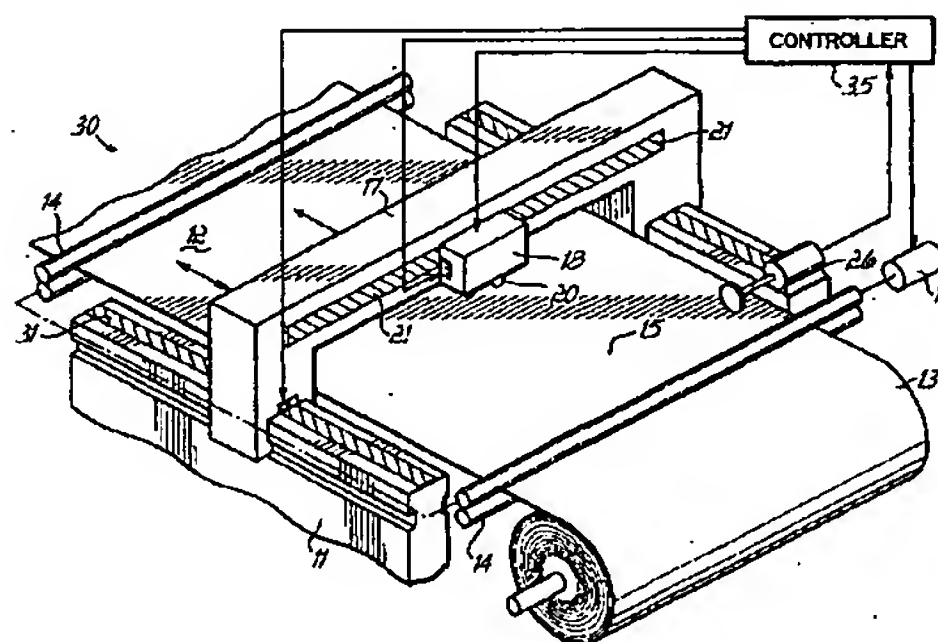
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished  
upon receipt of that report

[Continued on next page]

(54) Title: HIGH PRECISION FEED PARTICULARLY USEFUL FOR UV INK JET PRINTING ON VINYL



(57) **Abstract:** An apparatus (30, 40, 50) and a method of ink jet printing are disclosed that use a system for feeding a substrate longitudinally relative to a support area and a system for moving a printhead parallel to the direction of substrate feed. Indexing between transverse scan rows of a printhead (20) is carried out initially by the substrate feed system (16) and the actual feed distance is measured using an encoder or other substrate position measurement device (26). A controller (25) determines the amount of any error that occurs between the actual and the desired feed distances. The controller (25) then sends signals to move the printhead (20) to compensate for any error in the feed system feed. Compensating adjustments are then made to the next subsequent substrate indexing step so that the printhead tends to move back toward its home or zeroed position with its next correction and does not walk away from this home position as a result of cumulative movements. For printers that have bridges (17) moveable relative to the machine frame (11) on which the printhead (20) is carried, printhead motion is achieved by moving the bridge, for example, by actuating a linear servo bridge motion system (31). For fixed bridge roll-to-roll printers, the printhead (20) can be caused to shift longitudinally on the bridge (17) to make the correcting movements.